Source Water Assessment Report



Public Water Supply: COLDWATER, CITY OF

Assessment Areas Include: 147, 148



Kansas Department of Health and Environment Bureau of Water Watershed Management Section 1000 SW Jackson St., Suite 420 Topeka, KS 66612–1367





Burns &McDonnell 9400 Ward Parkway Kansas City, MO 64114 Kansas Geological Survey University of Kansas 1930 Constant Ave. Lawrence, KS 66047

Reports were generated with the Automated Source Water Assessment Tool (ASWAT). Assessments were completed online using ASWAT by hundreds of state employees, public water supply staff, and technical assistant providers throughout the State of Kansas.

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Report Description

Detailed Explanation of Entire Report:

The 1996 amendments to the Safe Drinking Water Act require each state to develop a Source Water Assessment Program (SWAP) and a Source Water Assessment (SWA) for each Public Water Supply (PWS) that treats and distributes raw source water. In Kansas there are 761 public water supplies that require SWAs. A SWA includes a delineation of the source water assessment area, an inventory of potential contaminant sources, and a susceptibility analysis.

A PWS can consist of one or more individual assessment areas that require different assessments. In general, an assessment area is delineated at a two-mile fixed radius for a groundwater well. A surface water intake assessment area is the upstream-drainage area (watershed), inside the state border. Additionally, an assessment area can consist of an individual well, group of wells, an individual surface water intake, or multiple surface water intakes.

After each assessment is completed a report is automatically generated using an Internet-based application called the Automated Source Water Assessment Tool (ASWAT). The individual assessment reports combine to form the entire SWA report for a PWS.

A map of each Assessment Area was also generated with ASWAT. However, for security reasons the maps are not included in this report. To obtain a copy of the map(s), please contact your local PWS.

All PWS reports will be available for viewing and downloading on KDHE's Watershed Management Section website(http://www.kdhe.state.ks.us/nps) in 2004.

COLDWATER, CITY OF Summary:

AA	Туре	Diversion Id
147	Ground water multiple wells	005, 006
148	Ground water multiple wells	004, 003

Assessment Area: 147

Diversion Id's: 005, 006
Status: Accepted

Submit Date: 2002–10–25 15:13:37

Executive Summary:

The Executive Summary gives the assessment area's Susceptibility Likelihood Score (SLS) for each contaminant of concern category.

SLS indicates which contaminant category is most likely to impact a given public water supply. Contaminants of concern for groundwater include microbiological, inorganic compounds, nitrates, synthetic organic compounds, pesticides, and volatile organic compounds. Contaminants of concern for surface water include microbiological, inorganic compounds, eutrophication – phosphorus, sedimentation, synthetic organic compounds, pesticides, and volatile organic compounds.

To determine the assessment area's susceptibility to contamination, a qualitative (semi-quantitative) screening level susceptibility analysis was designed that utilizes general assumptions and best professional judgement. It is a systematic procedure comprised of simple yes/no questions. Each question in the susceptibility analysis focuses on the presence or absence of potential pollution sources in the assessment area. SLS is most useful in helping the Public Water Supply (PWS) focus on water quality protection actions towards a contaminant category of concern. For example, if the SLS for microbiological contamination is high, relative to volatile organic compounds (VOC), water supply protection planners would conclude that the attention should be directed towards microbiological contaminant sources rather than VOC sources.

Executive Summary

Public Water Supply: COLDWATER, CITY OF

Assessment Area: 147

Susceptibility Likelihood Scores for Assessment Area

Contaminant Category	A	В	B*	С	C*	D
Susceptibility Likelihood Score – SLS	60	59	56	64	56	67
SLS Range	Mid	Mid	Mid	Mid	Mid	Mid

A – Microbiolgical

B* – Nitrates

C* – Pesticides

B – Inorganic Compounds

C – Synthetic Organic Compounds

D – Volatile Organic Compounds

Susceptibility Likelihood Range

SLS Range	
0-50	Low Susceptibility
51-80	Moderate Susceptibility
81–100	High Susceptibility

Assessment Area: 147

Diversion Id's: 005, 006
Status: Accepted

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Potential Sources:

The Potential Sources section lists all the sites that have been identified as potential sources of contamination.

Potential sources of contamination may include land uses, industry, or businesses that could generate or store chemicals/substances that could potentially contaminate the water supply only if released into the environment. Both unregulated sites from business location databases and regulated sites from various KDHE databases were compiled. Additional sites could have been added by an evaluator through the assessment process to supplement the original data.

The 1987 Standard Industrial Classifications (SIC) were used to identify potential contaminate sites. The SIC system classifies establishments into industries on the basis of the primary activities of the establishment.

Each assessment area is delineated with 3 assessment zones. These zones can be used to get a general understanding of the potential influence sites have based on proximity to the water supply. Zone A is a 100–foot radius around a groundwater well and a 1000–foot radius around a surface water intake. Zone B is a 2000–foot radius around wells and a hydrological delineated buffer around the surface water sources. Zone C is a 2–mile radius around wells and the balance of the watershed for intakes. The potential sources listed in this section are sorted to show all the potential sources in Zone A first, Zone B second, and Zone C third.

Although a facility or business is identified in the study as a potential concern, it does not necessarily mean a release or spill has occurred. Contamination could only occur if certain chemical substances are released into the environment and filter into the water supply source.

The data for the potential sources of contamination was compiled from May through August in 2002. Some of the databases used were incomplete datasets that are continually being updated. Due to the incompleteness, inaccuracies, and new development, it is possible that sources of potential contamination that are in the assessment area are not included in the report. Inaccurate locations could also cause sources to show up in the assessment area that are not actually in the assessment. Additionally, duplication between the datasets could cause sites to show up multiple times in the assessment area.

Potential Sources

Public Water Supply: COLDWATER, CITY OF

Assessment Area: 147

Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
164774	Newspapers Publishing and Printing		В
164775 Construction Machinery Manufacturing		3531	В
164777 Local Trucking, without Storage		4212	В
164770 Gasoline Service Station		5541	В
164789 Gasoline Service Station		5541	В
Top, Body, and Upholstery Repair Shops and Paint Shops		7532	В
164813 Auto Truck Repair Service		7538	В
164811	Top, Body, and Upholstery Repair Shops and Paint Shops	7532	С

Regulated Confined Animal Feeding Operations Potential Site Sources

Did Not Contain Any Of These Potential Site Sources

Regulated Hazardous Waste Potential Site Sources

Did Not Contain Any Of These Potential Site Sources

Regulated Leaking Storage Tank Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
3000233	Hess Service	02829	В
3000788	Comanche Co Road Dept	07858	В
3001573	Convenience Plus #8	25966	В

Regulated Identified Contaminated Potential Site Sources

Did Not Contain Any Of These Potential Site Sources

Regulated Solid Waste Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone		
5000058	Comanche County	0108-S	C		

Regulated Waste Water Potential Site Sources

Did Not Contain Any Of These Potential Site Sources

Assessment Area: 147

Diversion Id's: 005, 006
Status: Accepted

Submit Date: 2002–10–25 15:13:37

Added Sources:

The Added Sources section lists all the sites that have been added as potential sources of contamination by an evaluator through the assessment process to supplement the original data.

The potential sources listed in this section are sorted to show the added potential sources in Zone A first, Zone B second, and Zone C third.

Although a facility or business was added as a potential concern, it does not necessarily mean a release or spill has occurred. Contamination could only occur if certain chemical substances are released into the environment and filter into the water supply source.

Added Sources

Public Water Supply: COLDWATER, CITY OF

Assessment Area: 147

Added Potential Site Sources

Source No.	Source Name	SIC ID	Zone
9000138	9000138 CRP		В
9000139	9000139 CRP		В
9000140	irrigated cropland of rye	0	В
9000134	pastureland with stock cattle and horses	10080	В
9000135	pastureland w ith stock cattle and horses	10080	В
9000141 irrigated cropland of alfalfa		10086	В
9000132 CRP		0	С
9000131 Irrigation well pump site		10012	С
9000133	Waste Salt Water Storage Tanks	10026	С
9000130	non-discharging lagoons	10075	С
9000128	9000128 pastureland with cattle		С
9000129 cropland		115	С
9000136	dryland dairy	241	С

Assessment Area: 147

Diversion Id's: 005, 006
Status: Accepted

Submit Date: 2002–10–25 15:13:37

Potential Contaminants Summary:

The Contaminants Summary shows the number of identified unregulated sources in the assessment area for each contaminant of concern category.

In order to obtain the number or sources for each category, a relationship was correlated between each Standard Industrial Classification (SIC) and the contaminant of concern categories. Each SIC was assessed and associated with contaminant categories. For example, if not managed properly, a car wash (SIC 7542) could potentially contaminate an intake because of inorganic compounds (IOC) and volatile organic compounds (VOC); thus, a car wash is associated with IOCs and VOCs.

A chart displays a count for each contaminant category. The sum for each category represents the total number of identified sources that have been associated with that particular contaminant category. However, the total number of identified sources does not include contaminants from the Added Sources. In our example, a car wash would be considered 2 sources of contamination. It would be a potential source of contamination for IOCs and for VOCs; thus, 1 would be added to the total number of sources in the VOC category and 1 would be added to the IOC category.

Potential Contaminants Summary

Public Water Supply: COLDWATER, CITY OF

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Number of Unregulated Site Sources Identified for each Contaminant Category

MicroBiological	Pesticides	IOC's	SOC's	VOC's	Nitrates		
0	0	7	1	8	0		

A – Microbiolgical

B* – Nitrates

C* – Pesticides

B – Inorganic Compounds

C – Synthetic Organic Compounds

D – Volatile Organic Compounds

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Diversion Id's: 005, 006
Status: Accepted

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Potential Contaminants Listing:

The Potential Contaminants section lists the contaminant of concern category associated with each Standard Industrial Classification (SIC) found in an assessment area. A complete list of contaminant category codes are located at the bottom of this page.

The relationships defined between the Standard Industrial Classifications (SIC) and the contaminant of concern categories are displayed in a table format. Using our car wash example, the relationships can be better illustrated. A car wash could release IOC and VOC chemical substances. The connection is shown by indicating the SIC, 7542, and the associated contaminant categories, IOC (Category B) and VOC (Category D). However, the contaminants listed are not associated with any Added Sources.

The list is sorted by the SIC source description and it only shows unique SIC sources. For example, an assessment area can have 20 car washes in an assessment area, but the list is only going to show contaminant categories associated with car washes onetime. This is because all car washes have the same SIC and every car wash poses the same potential threat to water intakes.

A – Microbiolgical B – Inorganic Compounds
 B2 – Sedimentation B* – Nitrates
 B1 – Eutrophication – Phosphorous
 C – Synthetic Organic Compounds

2 Symmetric Organic Co

C* – Pesticides **D** – Volatile Organic Compounds

Potential Contaminants Listing

Public Water Supply: COLDWATER, CITY OF

Assessment Area: 147

Unregulated Identified Site Sources and associated Potential Contaminant Category

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
7538	Auto Truck Repair Service	Inorganics, VOCs	В
"	"	"	D
3531	Construction Machinery Manufacturing	inorganics, VOCs	В
"	"	"	D
5541	Gasoline Service Station	Inorganics, VOCs	В
"	"	"	D
4212	Local Trucking, without Storage	VOCs	D
7532	Top, Body, and Upholstery Repair Shops and Paint Shops	Inorganics, VOCs	В
"	"	"	D
2711	Newspapers Publishing and Printing	Inorganics, VOCs, Semi volatiles	В
"	"	"	С
"	"	"	D

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Diversion Id's: 005, 006
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Protection Measures:

The Protection Measures section shows water quality protection measures for the Standard Industrial Classifications (SIC) identified in the assessment area.

Previous sections of this report are designed to show areas that Public Water Supplies (PWS) can focus on to improve the susceptibility of an assessment area. This section helps identify water quality protection measures that a PWS can use as guidance for implementing action for a potential contaminant site in the assessment area. It focuses on protection measures that can reduce the risk of contamination to the water supply.

This portion of the report only displays water quality protection measures for each type of SIC found in the assessment area. It does not display protection measures for each site in the assessment area because every SIC should have the same or similar water quality protection management practices. However, the protection measures listed are not associated with any Added Sources.

Protection Measures

Public Water Supply: COLDWATER, CITY OF

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Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
7538	Auto Truck Repair Service	Inorganics, VOCs	Discharge to POTW. Manage oil products and used oil so that it is not in contact with water	40 CFR 442 and
3531	Construction Machinery Manufacturing	inorganics, VOCs	Manage wastes properly and treat process wastewater prior to discharge to a POTW or direct	State or federal Storm water pollution prevention regulations
5541	Gasoline Service Station	Inorganics, VOCs	Maintain area to minimize fuel contamination	NA
4212	Local Trucking, without Storage	VOCs	Discharge to a POTW	State or federal Storm water pollution prevention regulations
7532	Top, Body, and Upholstery Repair Shops and Paint Shops	Inorganics, VOCs	Discharge to POTW. Recycle where appropriate. Properly maintain oil product and waste. Manage paint and solvent wastes properly	NA
2711	Newspapers Publishing Inorganics, VOCs, Semi volatiles Recycle chemicals where possible. Discharge to POTW		40 CFR 459 and State or federal Storm water pollution prevention regulations	

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Diversion Id's: 005, 006
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Assessment Analysis:

The Assessment Analysis section displays the numbers assigned to each contaminant of concern category for each question in the susceptibility analysis.

This analysis is based on a decision tree framework consisting of a series of yes/no questions. These questions consider the proximity of contaminant sources to the water supply intake, the type of contaminant, and the application of pollution prevention or water quality protection practices to sources of contamination. As the evaluator moves through the analytical framework, susceptibility points are accumulated based on the presence of contaminant sources in the assessment area.

After all the questions have been answered, the SLS is calculated for each contaminant of concern category. The SLS is determined by counting the number of contamination risk factors found to occur in the delineated assessment area and applying a multiplier to this number. Because the number of contaminant category risk factors is not equal, the multiplier is used to establish a common scale for the SLS of each contaminant category.

Assessment Analysis

Public Water Supply: COLDWATER, CITY OF

Assessment Area: 147

Ground Water Multiple Wells Analysis

 ${\bf A}$ – Microbiolgical ${\bf B}$ – Inorganic Compounds

B* – Nitrates
 C – Synthetic Organic Compounds
 C* – Pesticides
 D – Volatile Organic Compounds

No.	Question	Response	A	В	B *	C	C *	D
1	Is any well under the influence of surface water?	No	0	0	0	0	0	0
2	Do all PWS wells meet KS PWS water well construction standards?	Yes	0	0	0	0	0	0
3	Is any well less than 30 feet deep?	No	0	0	0	0	0	0
4	Is gravel pack within 20 feet of any well surface?	No	0	0	0	0	0	0
5	Does a PWS own or control all the areas around the wells?	No	1	1	1	1	1	1
6	Does Zone B consist entirely of native grass?	No	2	2	2	2	2	2
7	Is there a contaminated well in Zone B?	No	0	0	0	0	0	0
8	Is a class V UIC well present?	No	0	0	0	0	0	0
9	Are any commercial, industrial, or urban areas present in Zone B?	Yes	1	1	1	1	1	1
10	Does each industrial/commercial site and urban area have a water quality protection plan in place?	No	1	1	1	1	1	1
11	Are any non-farm home sites present in Zone B?	Yes	1	0	1	0	1	0
12	Do all the non-farm home sites have a water quality protection plan?	No	1	0	1	0	1	0
13	Are any farmsteads present in Zone B?	Yes	1	1	1	1	1	1
14	Do all farmsteads have a water quality protection plan?	No	1	1	1	1	1	1
15	Is there grazing livestock in Zone B?	Yes	1	0	1	0	0	0
16	Have all livestock producers implemented water quality protection measures?	No	1	0	1	0	0	0
17	Is there livestock confinement in Zone B?	No	0	0	0	0	0	0

No.	Question	Response	A	В	B *	C	C*	D
18	Is each confined animal feeding operation registered with KDHE?	Yes	0	0	0	0	0	0
19	Is there corn or grain sorghum production in Zone B?	Yes	0	0	1	0	1	0
20	Are corn/grain sorghum nutrient and pesticide management plans in use for each site?	Yes	0	0	0	0	0	0
21	Are any orchards present in Zone B?	No	0	0	0	0	0	0
22	Are orchard nutrient and pesticide management plans in use for each site?	Yes	0	0	0	0	0	0
23	Are there unsewered developments (concentrations of lagoons or septic systems) present in Zone B?	Yes	1	1	1	0	0	0
24	Is there a railroad or major highway in Zone B or C?	Yes	0	1	1	1	1	1
25	Is there oil production in Zone B or C?	Yes	0	1	0	1	0	1
26	Do coarse textured soils predominate Zones A, B and C?	Yes	1	1	1	1	1	1
27	Is an irrigation well located in Zone B or C?	Yes	0	1	1	1	1	1
28	Is a wastewater treatment facility in Zone B or C?	No	0	0	0	0	0	0
29	Is a solid waste landfill in Zone B or C?	Yes	1	1	1	1	1	1
30	Are there unplugged, abandoned water wells present in Zone C?	Yes	2	1	1	1	1	1
31	Are any commercial, industrial, or urban area present in Zone C?	Yes	1	1	1	1	1	1
32	Does each industrial/commercial site and urban area have a water quality protection plan in place?	No	1	1	1	1	1	1
33	Is there livestock confinement in Zone C?	No	0	0	0	0	0	0
34	Is each confined livestock facility registered with KDHE?	Yes	0	0	0	0	0	0
35	Do all the livestock producers have water quality protection measures in place?	Yes	0	0	0	0	0	0
36	Are cropland nutrient management plans in place?	Yes	0	0	0	0	0	0
37	Are cropland pesticide management plans in place?	No	0	0	0	0	1	0
38	Does a perennial stream flow into Zone C?	Yes	1	1	1	1	1	1
39	Are watershed water quality protection plans in place?	Yes	0	0	0	0	0	0

Assessment Area: 147

Diversion Id's: 005, 006
Status: Accepted

Submit Date: 2002–10–25 15:13:37

Site Comments:

The Site Comments section lists all the comments that were added for the potential sources of contamination found in the assessment area.

Local comments and feedback from people that are familiar with the assessment area is an important aspect of the assessment. The comments greatly improve the assessment by adding detail to the sites that can be referenced for more information.

This local information may include comments on potential contamination threats (or lack there of), local water quality protection initiatives, etc. Adding comments are optional and are mainly focused on sources in areas that could have the greatest impact on water supply if a spill or release occurred in the environment. It is left to the discretion of the PWS and/or source water assessment committee to add comments.

Site Comments

Public Water Supply: COLDWATER, CITY OF

Assessment Area: 147

Comments for Unregulated Sites

Did Not Receive Any Comments

Comments for Regulated Confined Animal Feeding Operations Sites

Did Not Receive Any Comments

Comments for Regulated Hazardous Waste Sites

Did Not Receive Any Comments

Comments for Regulated Leaking Storage Tank Sites

Potential Contaminant Site Name	nt Site Site No. Site Comments		Author
Comanche Co Road Dept	3000788	Iwas excavated to 19 ft and it had a slight odor of	Nicole Fisher
Comanche Co Road Dept	3000788	Iwas excavated to 19 ft and it had a slight odor of	Nicole Fisher

Comments for Regulated Leaking Storage Tank Sites

Potential Contaminant Site Name	Site No.	Site Comments	Author
Comanche Co Road Dept	3000788	The site is closed from a diesel leak in 1991. The soil was excavated to 19 ft and it had a slight odor of diesel. The site is downgradient of the PWS.	Nicole Fisher
Convenience Plus #8	3001573	The site is currently being monitored from the seeping corrosion hole in buried diesel tanks from 1990. The tank is downgradient of the PWS.	Nicole Fisher
Convenience Plus #8	3001573	The site is currently being monitored from the seeping corrosion hole in buried diesel tanks from 1990. The tank is downgradient of the PWS.	Nicole Fisher
Convenience Plus #8	3001573	The site is currently being monitored from the seeping corrosion hole in buried diesel tanks from 1990. The tank is downgradient of the PWS.	
Hess Service	3000233	The contamination was gasoline and the site is currently being monitored. Two of the PWS are within .25 miles downgradient of the site.	
Hess Service	3000233	The site is currently being monitored from a gasoline leak. The leak was upgradient of the PWS.	
Hess Service	3000233	The site is currently being monitored from a gasoline leak. The leak was upgradient of the PWS.	Nicole Fisher

Comments for Regulated Identified Contaminated Sites

Did Not Receive Any Comments

Comments for Regulated Solid Waste Sites

Potential Contaminant Site Name	Site No.	Site Comments	Author
Comanche County	5000058	lconstruction/demolition tacility. No groundwater	Nicole Fisher

Comments for Regulated Waste Water Sites

Did Not Receive Any Comments

Assessment Area: 147

Diversion Id's: 005, 006
Status: Accepted

Submit Date: 2002–10–25 15:13:37

Added Site Comments:

The Added Site Comments section lists the comments for why sites were added as a potential source of contamination found to the assessment area.

Added Site Comments

Public Water Supply: COLDWATER, CITY OF

Assessment Area: 147

Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
CRP	9000132	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
CRP	9000138	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
CRP	9000139	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
Irrigation well pump site	9000131	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
Waste Salt Water Storage Tanks	9000133	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
Waste Salt Water Storage Tanks	9000133	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
Waste Salt Water Storage Tanks	9000133	Collects salt water from natural gas extraction. This information was obtained from Wellhead Protection plan.	
cropland	9000129	This information was obtained from the Wellhead Protection Plan.	
dryland dairy	9000136	This information was obtained from the Wellhead Protection Plan.	
irrigated cropland of alfalfa	9000141	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher

Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
irrigated cropland of rye	9000140	This information was obtained from the Wellhead Protection Plan.	
non-discharging lagoons	9000130	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
pastureland w ith stock cattle and horses	9000135	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
pastureland with cattle	9000128	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
pastureland with stock cattle and horses	9000134	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher

Assessment Area: 147

Diversion Id's: 005, 006
Status: Accepted

Submit Date: 2002–10–25 15:13:37

Analysis Question Comments:

The Analysis Question Comments section lists all the comments that were added during analysis portion of the assessment, in which a series of yes/no questions were asked.

Evaluators have the option to add comments to questions to clarify why a response was given or to give more details to a question. Local comments and feedback from people that are familiar with the assessment area is an important aspect of the assessment. The comments greatly improve the assessment by adding clarification and details that could not be identified with a simple yes or no response.

Analysis Question Comments

Public Water Supply: COLDWATER, CITY OF

Assessment Area: 147

Comments for Analysis Questions

Analysis Question	Question Comments	Author
Are corn/grain sorghum nutrient and pesticide management plans in use for each site?	The Co-op and farmers have implemented a number of Protection Measures in relation of fuel, fertilizer, and pesticides to comply with State and Federal Regulations. This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
Is there a railroad or major highway in Zone B or C?	The railroad tracks in the protection area are no longer in use according to the Wellhead Protection Plan.	Nicole Fisher
Are watershed water quality protection plans in place?	The city has a Source Water Assessment Plan that requires water in the PWS to be tested twice a month for contaminants.	Nicole Fisher

Assessment Area: 148

Diversion Id's: 004, 003
Status: Accepted

Submit Date: 2002–10–25 15:14:01

Executive Summary:

The Executive Summary gives the assessment area's Susceptibility Likelihood Score (SLS) for each contaminant of concern category.

SLS indicates which contaminant category is most likely to impact a given public water supply. Contaminants of concern for groundwater include microbiological, inorganic compounds, nitrates, synthetic organic compounds, pesticides, and volatile organic compounds. Contaminants of concern for surface water include microbiological, inorganic compounds, eutrophication – phosphorus, sedimentation, synthetic organic compounds, pesticides, and volatile organic compounds.

To determine the assessment area's susceptibility to contamination, a qualitative (semi-quantitative) screening level susceptibility analysis was designed that utilizes general assumptions and best professional judgement. It is a systematic procedure comprised of simple yes/no questions. Each question in the susceptibility analysis focuses on the presence or absence of potential pollution sources in the assessment area. SLS is most useful in helping the Public Water Supply (PWS) focus on water quality protection actions towards a contaminant category of concern. For example, if the SLS for microbiological contamination is high, relative to volatile organic compounds (VOC), water supply protection planners would conclude that the attention should be directed towards microbiological contaminant sources rather than VOC sources.

Executive Summary

Public Water Supply: COLDWATER, CITY OF

Assessment Area: 148

Susceptibility Likelihood Scores for Assessment Area

Contaminant Category	A	В	B*	С	C*	D
Susceptibility Likelihood Score – SLS	60	59	58	64	56	67
SLS Range	Mid	Mid	Mid	Mid	Mid	Mid

A – Microbiolgical

B* – Nitrates

C* – Pesticides

B – Inorganic Compounds

C – Synthetic Organic Compounds

D – Volatile Organic Compounds

Susceptibility Likelihood Range

SLS Range	
0-50	Low Susceptibility
51-80	Moderate Susceptibility
81–100	High Susceptibility

Assessment Area: 148

Diversion Id's: 004, 003
Status: Accepted

Submit Date: 2002–10–25 15:14:01

Potential Sources:

The Potential Sources section lists all the sites that have been identified as potential sources of contamination.

Potential sources of contamination may include land uses, industry, or businesses that could generate or store chemicals/substances that could potentially contaminate the water supply only if released into the environment. Both unregulated sites from business location databases and regulated sites from various KDHE databases were compiled. Additional sites could have been added by an evaluator through the assessment process to supplement the original data.

The 1987 Standard Industrial Classifications (SIC) were used to identify potential contaminate sites. The SIC system classifies establishments into industries on the basis of the primary activities of the establishment.

Each assessment area is delineated with 3 assessment zones. These zones can be used to get a general understanding of the potential influence sites have based on proximity to the water supply. Zone A is a 100–foot radius around a groundwater well and a 1000–foot radius around a surface water intake. Zone B is a 2000–foot radius around wells and a hydrological delineated buffer around the surface water sources. Zone C is a 2–mile radius around wells and the balance of the watershed for intakes. The potential sources listed in this section are sorted to show all the potential sources in Zone A first, Zone B second, and Zone C third.

Although a facility or business is identified in the study as a potential concern, it does not necessarily mean a release or spill has occurred. Contamination could only occur if certain chemical substances are released into the environment and filter into the water supply source.

The data for the potential sources of contamination was compiled from May through August in 2002. Some of the databases used were incomplete datasets that are continually being updated. Due to the incompleteness, inaccuracies, and new development, it is possible that sources of potential contamination that are in the assessment area are not included in the report. Inaccurate locations could also cause sources to show up in the assessment area that are not actually in the assessment. Additionally, duplication between the datasets could cause sites to show up multiple times in the assessment area.

Potential Sources

Public Water Supply: COLDWATER, CITY OF

Assessment Area: 148

Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
164774	Newspapers Publishing and Printing	2711	С
164775	Construction Machinery Manufacturing	3531	С
164777	Local Trucking, without Storage	4212	С
164770	Gasoline Service Station	5541	С
164789	Gasoline Service Station	5541	С
164811	Top, Body, and Upholstery Repair Shops and Paint Shops	7532	С
164812	Top, Body, and Upholstery Repair Shops and Paint Shops	7532	С
164813	Auto Truck Repair Service	7538	С

Regulated Confined Animal Feeding Operations Potential Site Sources

Did Not Contain Any Of These Potential Site Sources

Regulated Hazardous Waste Potential Site Sources

Did Not Contain Any Of These Potential Site Sources

Regulated Leaking Storage Tank Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
3000233	Hess Service	02829	С
3000788	Comanche Co Road Dept	07858	С
3001573	Convenience Plus #8	25966	С

Regulated Identified Contaminated Potential Site Sources

Did Not Contain Any Of These Potential Site Sources	

Regulated Solid Waste Potential Site Sources

Did Not Contain Any Of These Potential Site Sources

Regulated Waste Water Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
6001163	COLDWATER MWTP	M-CI02-NO01	С

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Added Sources:

The Added Sources section lists all the sites that have been added as potential sources of contamination by an evaluator through the assessment process to supplement the original data.

The potential sources listed in this section are sorted to show the added potential sources in Zone A first, Zone B second, and Zone C third.

Although a facility or business was added as a potential concern, it does not necessarily mean a release or spill has occurred. Contamination could only occur if certain chemical substances are released into the environment and filter into the water supply source.

Added Sources

Public Water Supply: COLDWATER, CITY OF

Assessment Area: 148

Added Potential Site Sources

Source No.	Source Name	SIC ID	Zone
9000138	CRP	0	В
9000134	pastureland with stock cattle and horses	10080	В
9000135	pastureland w ith stock cattle and horses	10080	В
9000132	CRP	0	С
9000131	Irrigation well pump site	10012	С
9000133	Waste Salt Water Storage Tanks	10026	С
9000130	non-discharging lagoons	10075	С
9000128	pastureland with cattle	10080	С
9000129	cropland	115	С
9000136	dryland dairy	241	С
9000137	Natural Gas pipeline	4600	С

Assessment Area: 148

Diversion Id's: 004, 003
Status: Accepted

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Potential Contaminants Summary:

The Contaminants Summary shows the number of identified unregulated sources in the assessment area for each contaminant of concern category.

In order to obtain the number or sources for each category, a relationship was correlated between each Standard Industrial Classification (SIC) and the contaminant of concern categories. Each SIC was assessed and associated with contaminant categories. For example, if not managed properly, a car wash (SIC 7542) could potentially contaminate an intake because of inorganic compounds (IOC) and volatile organic compounds (VOC); thus, a car wash is associated with IOCs and VOCs.

A chart displays a count for each contaminant category. The sum for each category represents the total number of identified sources that have been associated with that particular contaminant category. However, the total number of identified sources does not include contaminants from the Added Sources. In our example, a car wash would be considered 2 sources of contamination. It would be a potential source of contamination for IOCs and for VOCs; thus, 1 would be added to the total number of sources in the VOC category and 1 would be added to the IOC category.

Potential Contaminants Summary

Public Water Supply: COLDWATER, CITY OF

Assessment Area: 148

Number of Unregulated Site Sources Identified for each Contaminant Category

MicroBiological	Pesticides	IOC's	SOC's	VOC's	Nitrates
0	0	7	1	8	0

 $\mathbf{A}-Microbiolgical$

B* – Nitrates

C* – Pesticides

B – Inorganic Compounds

C – Synthetic Organic Compounds

D – Volatile Organic Compounds

Assessment Area: 148

Diversion Id's: 004, 003

Status: Accepted

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Potential Contaminants Listing:

The Potential Contaminants section lists the contaminant of concern category associated with each Standard Industrial Classification (SIC) found in an assessment area. A complete list of contaminant category codes are located at the bottom of this page.

The relationships defined between the Standard Industrial Classifications (SIC) and the contaminant of concern categories are displayed in a table format. Using our car wash example, the relationships can be better illustrated. A car wash could release IOC and VOC chemical substances. The connection is shown by indicating the SIC, 7542, and the associated contaminant categories, IOC (Category B) and VOC (Category D). However, the contaminants listed are not associated with any Added Sources.

The list is sorted by the SIC source description and it only shows unique SIC sources. For example, an assessment area can have 20 car washes in an assessment area, but the list is only going to show contaminant categories associated with car washes onetime. This is because all car washes have the same SIC and every car wash poses the same potential threat to water intakes.

A – Microbiolgical B – Inorganic Compounds
 B2 – Sedimentation B* – Nitrates
 B1 – Eutrophication – Phosphorous
 C – Synthetic Organic Compounds

C* – Pesticides **D** – Volatile Organic Compounds

Potential Contaminants Listing

Public Water Supply: COLDWATER, CITY OF

Assessment Area: 148

Unregulated Identified Site Sources and associated Potential Contaminant Category

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
7538	Auto Truck Repair Service	Inorganics, VOCs	В
"	"	"	D
3531	Construction Machinery Manufacturing	inorganics, VOCs	В
"	"	"	D
5541	Gasoline Service Station	Inorganics, VOCs	В
"	"	"	D
4212	Local Trucking, without Storage	VOCs	D
7532	Top, Body, and Upholstery Repair Shops and Paint Shops	Inorganics, VOCs	В
"	"	"	D
2711	Newspapers Publishing and Printing	Inorganics, VOCs, Semi volatiles	В
"	"	"	С
"	"	"	D

Assessment Area: 148

Diversion Id's: **004, 003**Status: **Accepted**

Submit Date: 2002–10–25 15:14:01

Protection Measures:

The Protection Measures section shows water quality protection measures for the Standard Industrial Classifications (SIC) identified in the assessment area.

Previous sections of this report are designed to show areas that Public Water Supplies (PWS) can focus on to improve the susceptibility of an assessment area. This section helps identify water quality protection measures that a PWS can use as guidance for implementing action for a potential contaminant site in the assessment area. It focuses on protection measures that can reduce the risk of contamination to the water supply.

This portion of the report only displays water quality protection measures for each type of SIC found in the assessment area. It does not display protection measures for each site in the assessment area because every SIC should have the same or similar water quality protection management practices. However, the protection measures listed are not associated with any Added Sources.

Protection Measures

Public Water Supply: COLDWATER, CITY OF

Assessment Area: 148

Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
7538	Auto Truck Repair Service	Inorganics, VOCs	Discharge to POTW. Manage oil products and used oil so that it is not in contact with water	40 CFR 442 and
3531	Construction Machinery Manufacturing	inorganics, VOCs Manage wastes properly and treat process wastewater prior to discharge to a POTW or direct		State or federal Storm water pollution prevention regulations
5541	Gasoline Service Station	Inorganics, VOCs	Maintain area to minimize fuel contamination	NA
4212	Local Trucking, without Storage	VOCs	Discharge to a POTW	State or federal Storm water pollution prevention regulations
7532	Top, Body, and Upholstery Repair Shops and Paint Shops	Inorganics, VOCs	Discharge to POTW. Recycle where appropriate. Properly maintain oil product and waste. Manage paint and solvent wastes properly	NA
2711	Newspapers Publishing and Printing	Inorganics, VOCs, Semi volatiles	Recycle chemicals where possible. Discharge to POTW	40 CFR 459 and State or federal Storm water pollution prevention regulations

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Assessment Analysis:

The Assessment Analysis section displays the numbers assigned to each contaminant of concern category for each question in the susceptibility analysis.

This analysis is based on a decision tree framework consisting of a series of yes/no questions. These questions consider the proximity of contaminant sources to the water supply intake, the type of contaminant, and the application of pollution prevention or water quality protection practices to sources of contamination. As the evaluator moves through the analytical framework, susceptibility points are accumulated based on the presence of contaminant sources in the assessment area.

After all the questions have been answered, the SLS is calculated for each contaminant of concern category. The SLS is determined by counting the number of contamination risk factors found to occur in the delineated assessment area and applying a multiplier to this number. Because the number of contaminant category risk factors is not equal, the multiplier is used to establish a common scale for the SLS of each contaminant category.

Assessment Analysis

Public Water Supply: COLDWATER, CITY OF

Assessment Area: 148

Ground Water Multiple Wells Analysis

 ${\bf A}$ – Microbiolgical ${\bf B}$ – Inorganic Compounds

B* – Nitrates
 C – Synthetic Organic Compounds
 C* – Pesticides
 D – Volatile Organic Compounds

No.	Question	Response	A	В	B *	C	C *	D
1	Is any well under the influence of surface water?	No	0	0	0	0	0	0
2	Do all PWS wells meet KS PWS water well construction standards?	Yes	0	0	0	0	0	0
3	Is any well less than 30 feet deep?	No	0	0	0	0	0	0
4	Is gravel pack within 20 feet of any well surface?	No	0	0	0	0	0	0
5	Does a PWS own or control all the areas around the wells?	No	1	1	1	1	1	1
6	Does Zone B consist entirely of native grass?	No	2	2	2	2	2	2
7	Is there a contaminated well in Zone B?	No	0	0	0	0	0	0
8	Is a class V UIC well present?	No	0	0	0	0	0	0
9	Are any commercial, industrial, or urban areas present in Zone B?	Yes	1	1	1	1	1	1
10	Does each industrial/commercial site and urban area have a water quality protection plan in place?	No	1	1	1	1	1	1
11	Are any non-farm home sites present in Zone B?	Yes	1	0	1	0	1	0
12	Do all the non-farm home sites have a water quality protection plan?	No	1	0	1	0	1	0
13	Are any farmsteads present in Zone B?	Yes	1	1	1	1	1	1
14	Do all farmsteads have a water quality protection plan?	No	1	1	1	1	1	1
15	Is there grazing livestock in Zone B?	Yes	1	0	1	0	0	0
16	Have all livestock producers implemented water quality protection measures?	No	1	0	1	0	0	0
17	Is there livestock confinement in Zone B?	No	0	0	0	0	0	0

No.	Question	Response	A	В	B *	C	C*	D
18	Is each confined animal feeding operation registered with KDHE?	Yes	0	0	0	0	0	0
19	Is there corn or grain sorghum production in Zone B?	Yes	0	0	1	0	1	0
20	Are corn/grain sorghum nutrient and pesticide management plans in use for each site?	Yes	0	0	0	0	0	0
21	Are any orchards present in Zone B?	No	0	0	0	0	0	0
22	Are orchard nutrient and pesticide management plans in use for each site?	Yes	0	0	0	0	0	0
23	Are there unsewered developments (concentrations of lagoons or septic systems) present in Zone B?	Yes	1	1	1	0	0	0
24	Is there a railroad or major highway in Zone B or C?	Yes	0	1	1	1	1	1
25	Is there oil production in Zone B or C?	Yes	0	1	0	1	0	1
26	Do coarse textured soils predominate Zones A, B and C?	Yes	1	1	1	1	1	1
27	Is an irrigation well located in Zone B or C?	Yes	0	1	1	1	1	1
28	Is a wastewater treatment facility in Zone B or C?	Yes	1	1	1	1	1	1
29	Is a solid waste landfill in Zone B or C?	No	0	0	0	0	0	0
30	Are there unplugged, abandoned water wells present in Zone C?	Yes	2	1	1	1	1	1
31	Are any commercial, industrial, or urban area present in Zone C?	Yes	1	1	1	1	1	1
32	Does each industrial/commercial site and urban area have a water quality protection plan in place?	No	1	1	1	1	1	1
33	Is there livestock confinement in Zone C?	No	0	0	0	0	0	0
34	Is each confined livestock facility registered with KDHE?	Yes	0	0	0	0	0	0
35	Do all the livestock producers have water quality protection measures in place?	Yes	0	0	0	0	0	0
36	Are cropland nutrient management plans in place?	No	0	0	1	0	0	0
37	Are cropland pesticide management plans in place?	No	0	0	0	0	1	0
38	Does a perennial stream flow into Zone C?	Yes	1	1	1	1	1	1
39	Are watershed water quality protection plans in place?	Yes	0	0	0	0	0	0

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Site Comments:

The Site Comments section lists all the comments that were added for the potential sources of contamination found in the assessment area.

Local comments and feedback from people that are familiar with the assessment area is an important aspect of the assessment. The comments greatly improve the assessment by adding detail to the sites that can be referenced for more information.

This local information may include comments on potential contamination threats (or lack there of), local water quality protection initiatives, etc. Adding comments are optional and are mainly focused on sources in areas that could have the greatest impact on water supply if a spill or release occurred in the environment. It is left to the discretion of the PWS and/or source water assessment committee to add comments.

Site Comments

Public Water Supply: COLDWATER, CITY OF

Assessment Area: 148

Comments for Unregulated Sites

Did Not Receive Any Comments

Comments for Regulated Confined Animal Feeding Operations Sites

Did Not Receive Any Comments

Comments for Regulated Hazardous Waste Sites

Did Not Receive Any Comments

Comments for Regulated Leaking Storage Tank Sites

Potential Contaminant Site Name	Site No.	Site Comments	Author
Comanche Co Road Dept	3000788	Iwas excavated to 19 ff and it had a slight odor of	Nicole Fisher
Comanche Co Road Dept	3000788	Iwas excavated to 19 ft and it had a slight odor of	Nicole Fisher

Comments for Regulated Leaking Storage Tank Sites

Potential Contaminant Site Name	Site No.	Site Comments	Author
Comanche Co Road Dept	3000788	The site is closed from a diesel leak in 1991. The soil was excavated to 19 ft and it had a slight odor of diesel. The site is downgradient of the PWS.	Nicole Fisher
Convenience Plus #8	3001573	The site is currently being monitored from the seeping corrosion hole in buried diesel tanks from 1990. The tank is downgradient of the PWS.	Nicole Fisher
Convenience Plus #8	3001573	The site is currently being monitored from the seeping corrosion hole in buried diesel tanks from 1990. The tank is downgradient of the PWS.	Nicole Fisher
Convenience Plus #8	3001573	The site is currently being monitored from the seeping corrosion hole in buried diesel tanks from 1990. The tank is downgradient of the PWS.	Nicole Fisher
Hess Service	3000233	The contamination was gasoline and the site is currently being monitored. Two of the PWS are within .25 miles downgradient of the site.	Nicole Fisher
Hess Service	3000233	The site is currently being monitored from a gasoline leak. The leak was upgradient of the PWS.	Nicole Fisher
Hess Service	3000233	The site is currently being monitored from a gasoline leak. The leak was upgradient of the PWS.	Nicole Fisher

Comments for Regulated Identified Contaminated Sites

Did Not Receive Any Comments

Comments for Regulated Solid Waste Sites

Did Not Receive Any Comments

Comments for Regulated Waste Water Sites

Did Not Receive Any Comments

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Status: Accepted

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Added Site Comments:

The Added Site Comments section lists the comments for why sites were added as a potential source of contamination found to the assessment area.

Added Site Comments

Public Water Supply: COLDWATER, CITY OF

Assessment Area: 148

Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
CRP	9000132	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
CRP	9000138	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
Irrigation well pump site	9000131	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
Natural Gas pipeline	9000137	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
Waste Salt Water Storage Tanks	9000133	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
Waste Salt Water Storage Tanks	9000133	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
Waste Salt Water Storage Tanks	9000133	Collects salt water from natural gas extraction. This information was obtained from Wellhead Protection plan.	Nicole Fisher
cropland	9000129	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
dryland dairy	9000136	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
non-discharging lagoons	9000130	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher

Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
pastureland w ith stock cattle and horses	9000135	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
pastureland with cattle	9000128	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher
pastureland with stock cattle and horses	9000134	This information was obtained from the Wellhead Protection Plan.	Nicole Fisher

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Status: Accepted

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Analysis Question Comments:

The Analysis Question Comments section lists all the comments that were added during analysis portion of the assessment, in which a series of yes/no questions were asked.

Evaluators have the option to add comments to questions to clarify why a response was given or to give more details to a question. Local comments and feedback from people that are familiar with the assessment area is an important aspect of the assessment. The comments greatly improve the assessment by adding clarification and details that could not be identified with a simple yes or no response.

Analysis Question Comments

Public Water Supply: COLDWATER, CITY OF

Assessment Area: 148

Comments for Analysis Questions

Analysis Question	Question Comments	Author
Is there a railroad or major highway in Zone B or C?	The railroad tracks in the protection area are no longer in use according to the Wellhead Protection Plan.	Nicole Fisher
	The city has a Source Water Assessment Plan that requires the PWS to be tested twice a month for contaminants.	Nicole Fisher